



CERN/PS 98-01 (DI)
January 1998

PS Division Reports

January – December, 1997

CERN/PS 97-01 (DI)

PS Division Reports, January – December 1996

Edited by S.L. Neboux

CERN/PS 97-02 (DI)

The Status of Stochastic Cooling

D. Möhl

11th ICFA Beam Dynamics Workshop on Beam Cooling and Instability Damping, Moscow and Nizhny Novgorod, 18-26 June 1996

CERN/PS 97-03 (DI)

Recent Results on Lead-Ion Accumulation in LEAR for the LHC

S. Baird, J. Bosser, J. Broere, C. Carli, M. Chanel, C.E. Hill, R. Ley, A. Lombardi, R. Maccaferri, S. Maury, I. Meshkov, D. Möhl, G. Molinari, H. Mulder, E. Syresin, E. Tanke, G. Tranquille, F. Varenne, M. Vretenar

11th ICFA Beam Dynamics Workshop on Beam Cooling and Instability Damping, Moscow and Nizhny Novgorod, Russia, 18-26 June 1996

CERN/PS 97-04 (OP)

Wire Scanners in Large Beam Emittance Accelerators

P. Elmfors, A. Fassò, M. Huhtinen, M. Lindroos, J. Olsfors, U. Raich

CERN/PS 97-05 (HP)

Linac 2 Performance Optimization

A. Ster

CERN/PS 97-06 (LP)

CLIC Note 323

A Statistical Approach to Analyse the Efficiency of BNS Damping and Correction Algorithms in Linear Colliders

S. Fartoukh

CERN/PS 97-07 (DI)

Automated Beam Optics Correction for Emittance Preservation

B. Autin, V. Ducas, A. Lombardi, M. Martini, E. Wildner

3rd International Workshop on High Brightness Beams for Large Hadron Colliders (LHC96), Montreux, Switzerland, 13-18 October 1996

CERN/PS 97-08 (DI)

PS Division Annual Report 1996

Edited by B.W. Allardyce

CERN/PS 97-09(CA)**CERN PS High Brightness Operation for LHC**

R. Cappi

*25th INS Symposium, Tokyo, Japan***CERN/PS 97-10(RF)****Longitudinal Limitations in the PS Complex for the Generation of the LHC Proton Beam**

R. Garoby

*3rd International Workshop on High Brightness Beams for Large Hadron Colliders (LHC96), Montreux, Switzerland, 13-18 October 1996***CERN/PS 97-11(DI)****The PS Booster as Pre-Injector for LHC**

K. Schindl

*3rd International Workshop on High Brightness Beams for Large Hadron Colliders (LHC96), Montreux, Switzerland, 13-18 October 1996***CERN/PS 97-12(DI)****PS-XXI, A New Synchrotron for the LHC Injector**

B. Autin, R. Cappi, R. Garoby, J. Gruber, J.P. Riunaud, K.H. Schindl

*3rd International Workshop on High Brightness Beams for Large Hadron Colliders (LHC96), Montreux, Switzerland, 13-18 October 1996***CERN/PS 97-13(RF)****Experience with Stochastic Cooling of Particle Beams**

F. Caspers

*International Symposium on Multi-GeV High Performance Accelerators and Related Techniques, Osaka, Japan, 12-14 March 1997***CERN/PS 97-14(OP)****Mismatch between the PSB and CPS due to the Present Vertical Recombination Scheme**

A. Jansson, M. Lindroos

CERN/PS 97-15(CA)**Beam Optics Modeling at CPS Extraction throughout a Non-linear Fringe Field**

D. Manglunki, M. Martini

*3rd International Workshop on High Brightness Beams for Large Hadron Colliders (LHC96), Montreux, Switzerland, 13-18 October 1996***CERN/PS 97-16(CA)****The PS in the LHC Injector Chain**

R. Cappi

*3rd International Workshop on High Brightness Beams for Large Hadron Colliders (LHC96), Montreux, Switzerland, 13-18 October 1997***CERN/PS 97-17(RF)****Design of an RF Gun for Heavy Beam Loading**

R. Bossart, M. Dehler

5th European Particle Accelerator Conference. Europhysics Conference, 10-14 June 1996, Sitges (Barcelona), Spain

CERN/PS 97-18(CA)**Emittance Measurements in the CERN PS Complex**

M. Martini, H. Schönauer

*3rd International Workshop on High Brightness Beams for Large Hadron Colliders (LHC96),
Montreux, Switzerland, 13-18 October 1996***CERN/PS 97-19(DI)****Characteristics of a Betatron Core for Extraction in a Proton-Ion Medical Synchrotron**

L. Badano, S. Rossi

CERN/PS 97-20(LP)

CLIC Note 337

A Low Emittance Lattice for the CLIC Damping Ring

J.P. Potier, L. Rivkin

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-21(LP)**

CLIC Note 336

A Statistical Approach to Analyse Effect of Misalignments and Correction Algorithms in High-Energy Linacs

S. Fartoukh

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-22(LP)**

CLIC Note 338

Emittance Dilution in 1 and 5 TeV 30 GHz Linear Colliders

G. Guignard, T.O. Raubenheimer, D. Schulte

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-23(LP)**

CLIC Note 339

A 30 GHz 5-TeV Linear ColliderJ.P. Delahaye G. Guignard I. Wilson, CERN, J. Irwin T.O. Raubenheimer R.D. Ruth
P.B. Wilson, SLAC*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-24(LP)**

CLIC Note 340

Beam Characteristics versus Cavity Models in CLIC

G. Guignard J. Hagel

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-25(LP)**

CLIC Note 341

Analysis of a Symmetric Triplet and its Application to Ring Insertions

T. D'Amico, G. Guignard

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-26(LP)**

CLIC Note 342

Design of a 30 GHz Damped Detuned Accelerating Structure

M. Dehler R.M. Jones, R.M. Kroll, I. Wilson, W. Wuensch

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-27(HP)****Combined Longitudinal and Transverse Multiturn Injection in a Heavy Ion Accumulator**

Ch. Carli, S. Maury, D. Möhl

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada

CERN/PS 97-28(LP)

CLIC Note 343

Pre-Alignment of CLIC using the Double-Wire Method

W. Coosemans, H. Mainaud

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-29(DI)****Analytic Lattice Design with Beam Optics**

B. Autin, T. D'Amico, V. Ducas, M. Martini, E. Wildner

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-30(LP)**

CLIC Note 344

A Multi-Drive Beam Scheme for Two-Beam Acceleration in a TeV Linear Collider

R. Corsini, J.P. Delahaye, C. Johnson, A. Millich, A. Riche,

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-31(LP)**

CLIC Note 345

Nulling Emittance Measurement Technique for CLIC Test Facility

H.H. Braun, F. Chautard, P. Tenenbaum

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-32(LP)**

CLIC Note 330

The Drive Beam Generation for Two Beam Accelerators

R. Corsini

*7th Workshop on Advanced Accelerator Concepts 1996, Lake Tahoe, CA, USA***CERN/PS 97-33(CA)****Coupled Landau Damping**

E. Métral

CERN/PS 97-34(RF)**Low Level RF and Feedback**

R. Garoby

*Joint US-CERN-Japan Accelerator School - RF Engineering for Particle Accelerators - Shonan Int. Village, Hayama & KEK, Tsukuba, Japan, 9-18 September 1996***CERN/PS 97-35(HP)****Beam Optics Issues for the Antiproton Decelerator**

P. Belochitskii, JINR, RU-141 980 Dubna, Russia

C. Carli, T. Eriksson, R. Giannini, S. Maury, D. Möhl, F. Pedersen, CERN, CH-1211 Geneva 23, Switzerland

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada***CERN/PS 97-36(HP)****The Antiproton Decelerator : AD**

S. Baird, D. Berlin, J. Boillot, J. Bossert, M. Brouet, J. Buttke, F. Caspers, V. Chohan, D. Dekkers, T. Eriksson, R. Garoby, R. Giannini, O. Grobner, J. Gruber, J.Y. Hémerly, H. Koziol, R. Maccaferri, S. Maury, C. Metzger, K. Metzmacher, D. Möhl, H. Mulder, M. Paoluzzi, F. Pedersen, J.P. Riunaud, C. Serre, D.J. Simon, G. Tranquille, J. Tuyn, A. Van der Schueren

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada

CERN/PS 97-37(HP)**Recent Lead Ion Storage Tests on LEAR**

J. Bosser, J. Broere, C. Carli, M. Chanel, C. Hill, R. Ley, A. Lombardi, R. Maccaferri, S. Maury, D. Möhl, G. Molinari, H. Mulder, E. Tanke, G. Tranquille, M. Vretenar

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada

CERN/PS 97-38(HP)**Overview of the Recent Operation of the AAC and LEAR for the Low-Energy Antiproton Physics Programme**

S. Baird, J. Boillot, F. Caspers, M. Chanel, V. Chohan, T. Eriksson, R. Ley, S. Maury, C. Metzger, D. Möhl, H. Mulder, F. Pedersen, G. Tranquille

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada

CERN/PS 97-39(RF)**The PS 40 MHz Bunching Cavity**

R. Garoby, D. Grier, E. Jensen, CERN - CH 1211 Geneva 23, Switzerland
A. Mitra, R.L. Poirier, TRIUMF 4004 Wesbrook Mall, Vancouver, B.C., Canada V6T 2A3

1997 Particle Accelerator Conference, 12 - 16 May 1997, Vancouver, B.C. Canada

CERN/PS 97-40(CA)**The Application of Saturating Inductors for Improving the Performance of the CERN PS Kicker Systems**

G.D. Wait, M.J. Barnes, TRIUMF, Vancouver, Canada, K.D. Metzmacher, L. Sermeus, CERN

1997 Particle Accelerator Conference, 12-16.5.1997, Vancouver, B.C. Canada

CERN/PS 97-41(CA)**The CERN PS East Area in the LHC Era**

L. Durieu, O. Ferrando, J.-Y. Hémerly, J.P. Riunaud, B. Williams

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C., Canada

CERN/PS 97-42(CA)**Parallel Algorithms for the Analysis of Non-linear Betatronic Motion**

M. Giovannozzi, INFN, Sezione di Bologna, Bologna, Italy, E. McIntosh, CERN

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C. Canada

CERN/PS 97-43(CA)**PLATO : A Program Library for the Analysis of 4D Non-Linear Transverse Motion**

M. Giovannozzi, INFN Sezione di Bologna, Bologna, Italy, E. Todesco, A. Bazzani, Dipartimento di Fisica, University of Bologna, Italy, R. Bartolini, CERN

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C. Canada

CERN/PS 97-44(CA)**Computation of the Dynamic Aperture of 2D Generic Maps using Invariant Manifolds**

M. Giovannozzi, INFN, Sezione di Bologna, Bologna, Italy

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C. Canada

CERN/PS 97-45(CA)**Longitudinal Coupled-Bunch Instability around 1 GHz at the CERN PS Booster**

F. Caspers, M. Chanel, H. Schönauer, L. Soby, CERN, Geneva, Switzerland, M. D'Yachkov, TRIUMF, Vancouver, Canada

1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C. Canada

CERN/PS 97-46(OP)**Lattices for Medical Synchrotrons employing Active Scanning**

M. Benedikt

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C. Canada***CERN/PS 97-47(OP)****Matching to Gantries for Medical Synchrotrons**

M. Benedikt, C. Carli

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C. Canada***CERN/PS 97-48(DI)****Conversion of the PS complex as LHC Proton Pre-Injector**

F. Blas, R. Cappi, V. Chohan, D. Cornuet, G. Daems, D. Dekkers, R. Garoby, D. Grier, J. Gruber, E. Jensen, H. Koziol, A. Krusche, K.D. Metzmacher, F. Pedersen, J. Pedersen, U. Raich, J.P. Riunaud, J.P. Royer, M. Sassowsky, K. Schindl, H. Schönauer, M. Thivent, H.G. Ullrich, F. Völker

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C. Canada***CERN/PS 97-49(OP)****Emittance Preservation in the PS Complex**

B. Autin, L. Giulicchi, A. Jansson, M. Lindroos, A. Lombardi, M. Martini, K. Schindl

*1997 Particle Accelerator Conference, 12-16.5.97, Vancouver, B.C. Canada***CERN/PS 97-50(DI)****Time Profile of the Slowly Extracted Beam**

M. Pullia

CERN/PS 97-51(LP)

CLIC Note 333

Scaling Laws for e^+e^- Linear Colliders

J.P. Delahaye

CERN/PS 97-52(HP)**Experiments on a 14.5 GHz ECR Source**

C.E. Hill, K. Langbein

*7th International Conference on Ion Sources, Taormina, Italy, 7-13 September 1997, proceedings to be published in a special issue of Review of Scientific Instruments.***CERN/PS 97-53(BD)****Real-Time Control, Acquisition and Data Treatment for Beam Current Transformers in a Transfer Line**

C. Carter, V. Chohan, G. Gelato, F. Lenardon, M. Ludwig, J.D. Schnell

*RT97/Beaune 22-26 September 1997***CERN/PS 97-54(CO)****Managing the Real-Time Behaviour of a Particle Beam Factory: the CERN Proton Synchrotron Complex and its Timing System Principles**

J.-C. Bau, G. Daems, J. Lewis, J. Philippe

Xth IEEE Real-Time Conference 97, Beaune (France), September 22-26, 1997

CERN/PS 97-55(CO)**Design of a Remote Data Subscription Mechanism**

L. Giulicchi, C.-H. Sicard

*Xth IEEE Real Time Conference 97, Beaune (France), September 22-26, 1997***CERN/PS 97-56(BD)****VME-Based Remote Instrument Control without Ground Loops**

J. Belleman, J. Calvin, J.L. Gonzalez

*DIPAC 97, LNF-INFN Frascati (Rome) Italy, 12-14 October 1997***CERN/PS 97-57(BD)****Prospects for Improving the Performance of DC Beam Transformers**

P. Odier

*DIPAC 97, LNF-INFN Frascati (Rome) Italy, 12-14 October 1997***CERN/PS 97-58(BD)****Trajectory Measurement of Bunches Ejected from the CERN PSB**

M. Le Gras, D.J. Williams

*DIPAC 97, LNF-INFN Frascati (Rome) Italy, 12-14 October 1997***CERN/PS 97-59(BD)****A Comparative Study of Fast Wire Scanners, BeamScope and SEM-Grids for Emittance Measurements at the PS Booster**

M. Arruat, C. Carli, H. Koziol, M. Lindroos, M. Martini, J. Olsfors, U. Raich, H. Schönauer

*Presented at DIPAC 97, LNF-INFN Frascati (Rome) Italy, 12-14 October 1997***CERN/PS 97-60(DI)****A New Compact Large Frequency-Swing RF System for Hadron Acceleration: Test Results**

M. Crescenti, G. Primadei, A. Susini

CERN/PS 97-61(CO)**Recent Developments in the Application of Object Oriented Technologies in the CERN PS Controls**

M. Arruat, F. Di Maio, N. Gomez-Rojo, Y. Pujante

*Int. Conference on Accelerator and Large Experimental Physics Control Systems (Icalepcs'97), November 3-7, 1997, IHEP, Beijing, China***CERN/PS 97-62(CO)****Integration of a Relational Database in the CERN PS Control System**

J.H. Cuperus, M. Lelaizant

*Int. Conference on Accelerator and Large Experimental Physics Control Systems (Icalepcs'97), November 3-7, 1997, IHEP, Beijing, China***CERN/PS 97-63(CO/OP)****An Alternative to Classical Real-Time Magnetic Field Measurements using a Magnet Model**

F. Caspers, W. Heinze, J. Lewis, M. Lindroos, T. Salvermoser

Int. Conference on Accelerator and Large Experimental Physics Control Systems (Icalepcs'97), November 3-7, 1997, IHEP, Beijing, China

CERN/PS 97-64(CO/OP)**Generic Automated Beam Steering and Beam Shaping Programs with an Objected Oriented Approach**

M. Arruat, A. Jansson, F. Di Maio, G.-H. Hemelsoet, M. Lindroos, O. Tungesvik

*Int. Conference on Accelerator and Large Experimental Physics Control Systems (Icalepcs'97), November 3-7, 1997, IHEP, Beijing, China***CERN/PS 97-65(CO/OP)****Database for Accelerator Optics**

B. Autin, F. Di Maio, M. Gourber-Pace, M. Lindroos, J. Schinzel

*Int. Conference on Accelerator and Large Experimental Physics Control Systems (Icalepcs'97), November 3-7, 1997, IHEP, Beijing, China***CERN/PS 97-66(CO/HP)****Using a Fiber Optic CAN Bus for the Proton Source Control of the CERN PS Linac**

G. Gräwer, W. Heinze

*Int. Conference on Accelerator and Large Experimental Physics Control Systems (Icalepcs'97), November 3-7, 1997, IHEP, Beijing, China***CERN/PS 97-67(CO)****The Use of ACOP Tools in Writing Control System Software**

I. Deloose, P. Duval, H. Wu

*Int. Conference on Accelerator and Large Experimental Physics Control Systems (Icalepcs'97), November 3-7, 1997, IHEP, Beijing, China***CERN/PS 97-68(DI)****RF Empty Bucket Channelling Combined with a Betatron Core to Improve Slow Extraction in Medical Synchrotrons**

M. Crescenti

Edited by Susan Neboux

Lists and texts of PS Reports are available on WWW, see

<http://www.cern.ch/CERN/Divisions/PS/Reports/AllReports.html>***Distribution***PS Scientific Staff
External Distribution Lists